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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.          | CONFIRMATION NO. |
|---|-------------|----------------------|------------------------------|------------------|
| 10/771,246  | 02/03/2004  | Shahid Butt          | 03P51158US/INTECH<br>3.0-100 | 2585             |
| 48154   | 7590        | 04/20/2006           | EXAMINER<br>LEE, HWA S       |                  |
| SLATER & MATSIL LLP<br>17950 PRESTON ROAD<br>SUITE 1000<br>DALLAS, TX 75252 |             |                      | ART UNIT<br>2877             | PAPER NUMBER     |

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/771,246

Applicant(s)

BUTT ET AL.

Examiner

Andrew Hwa S. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/3/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. Figure 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claims 1-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shirley (US 6,690,474).

For **claims 1, 7, and 10**, Shirley shows a method for surface contour measurement comprising the steps of:

generating two light beams ( $P_1$  and  $P_2$ ) using a substantially coherent light source  
(column 7, lines 25+);

directing a first one of said two light beams onto a sample (Figure 16, sample 10); and

directing a second one of said two light beams onto of said substrate;

said first and second light beams being directed onto a common location on said substrate  
such that said first and second light beams interfere with each other and form a  
pattern of alternating light bands and dark bands (fringes) on said sample;

Shirley does not expressly state that:

- a) the sample is a substrate;
- b) one of said light bands illuminates a region of said substrate that includes at least one feature formed on said substrate; and
- c) said width of said light band and said width of said feature being substantially equal.

With regards to the sample being a substrate, Shirley shows sample 10 in Figure 16 that is substantially flat, thus a substrate, with the top surface having a variation in height (i.e. feature formed on the substrate), thus meeting the limitation.

With regards to the light bands illuminating the feature, since Shirley shows the fringes are projected broadly over the surface, most of the surface features would be illuminated by the fringes, thus meeting the limitation.

With regards to the widths being substantially equal (claim 10), since Shirley shows the features having various sizes, it would be inherent that a width of a light band would be substantially equal to the width of a feature on the sample.

With regards to claim **2 and 6-9**, Shirley shows that the contour of the features are detected from the reflected light.

With regards to **claims 3 and 11**, since the claim does not clearly limit what a “respective region” is respective of, and also does not limit what a “corresponding feature” corresponds to,

the claim is met since Shirley shows the sample being broadly illuminated where the features are illuminated.

With respect to **claims 4, 5, and 12**, since the claim does not expressly limit what constitutes a “feature,” the bumps on the sample would meet the limitation of a feature and since fringes are projected onto the sample, there would be regions where two bumps are illuminated and another region where two bumps are illuminated.

6. For **claim 13**, Shirley shows an apparatus for surface contour measurement comprising:
- an interferometer operable to generate two light beams ( $P_1$  and  $P_2$ ) using a substantially coherent light source and being further operable to direct said two light beams onto a common location on a sample such that said two light beams interfere with each other and form a pattern of alternating light bands and dark bands (fringes) on the sample such that one of said light bands illuminates a region of said sample; and
  - a detection system (22, 28) operable to measure a property (contour) of said feature using light detected from said feature.

Shirley does not expressly state that the sample is a substrate. Shirley shows sample 10 in Figure 16 that is substantially flat, thus a substrate, with the top surface having a variation in height (i.e. feature formed on the substrate), thus meeting the limitation.

With regards to **claims 14 and 15**, Shirley shows that the contour of the features are detected from the reflected light.

With respect to **claim 16**, please see ball-joint 76.

With respect to **claim 17**, please see 28 and 32.

With respect to **claim 18**, since the two sources are from the same light source, it would be inherent that the fringes are of equal width.

With regards to **claim 19**, since the claim does not clearly limit what a “respective region” is respective of, and also does not limit what a “corresponding feature” corresponds to, the claim is met since Shirley shows the sample being broadly illuminated where the features are illuminated.

With respect to **claim 20**, since the claim does not expressly limit what constitutes a “feature,” the bumps on the sample would meet the limitation of a feature and since fringes are projected onto the sample, there would be regions where two bumps are illuminated and another regions where two bumps are illuminated.

***2114 [R-1] Apparatus and Article Claims - Functional Language***

Claim limitations found in claims **13-20** are functional limitations and these limitations can be met by the prior art if the structure of the prior art is capable of performing the claimed functions.

APPARATUS CLAIMS MUST BE STRUCTURALLY DISTINGUISHABLE FROM  
THE PRIOR ART

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Hwa S. Lee whose telephone number is 571-272-2419. The examiner can normally be reached on Tue-Fr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on 571-272-2800 ext 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Andrew Hwa Lee', is positioned above the printed name.

Andrew Hwa Lee  
Primary Examiner  
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